24 Aug 2020: PIB Summary & Analysis

1. Delimitation Commission

What is the Delimitation Commission?

The Delimitation Commission is a high-level body set up by an act of Parliament to carry out the delimitation process, that is, fixing limits or boundaries of territorial constituencies in a country to represent changes in population.

Know more about delimitation and the Delimitation Commission in the linked article.

Context:

New office premises for Delimitation Commission inaugurated.

2. Asian Infrastructure Investment Bank (AIIB)

Context:

Government of India and AIIB sign agreement.

Details:

- The Government of India, the Government of Maharashtra, Mumbai Railway Vikas Corporation and the Asian Infrastructure Investment Bank (AIIB) signed a loan agreement for a $500 million Mumbai Urban Transport Project-III to improve the network capacity, service quality and safety of the suburban railway system in Mumbai.
- The project is expected to increase network capacity in the region with a reduction in journey time and fatal accidents of commuters.

To know more about the Asian Infrastructure Investment Bank (AIIB), click on the linked article.

3. Right to Information (RTI)

Context:

Union Minister said that the RTI disposal rate had remained unaffected by the pandemic and during certain given intervals of time, the disposal rate was even higher than the usual.

To know more about the right to information and the RTI Act of 2005, click on the linked article.

4. Fuel from Algae

Context:

INSPIRE faculty fellow developing low-cost biodiesel from microalgae.

Details:

- An INSPIRE faculty fellow from the National Institute of Technology, Tiruchirappalli, Tamil Nadu has proposed techniques for enhancing the triacylglycerol content in marine microalgae towards economic biodiesel production.
- This submission by the scientist received the "Innovation in Science Pursuit for Inspired Research" (INSPIRE) faculty fellowship instituted by the Department of Science & Technology, Govt. of India.
- The scientist and his team have isolated predominant strains of marine microalgal species namely Picochlorum sp., Scenedesmus sp., Chlorella sp., from the coastal regions of Tamil Nadu for their potential in terms of total organic carbon content, and Triacylglycerides (TAG) content for biodiesel production.

Fuel potential of algae

- While fossil fuels deplete, the fuel potential of algae residing in the vast marine environment surrounding India remains unexplored.
- Algae fuel, algal biofuel, or algal oil is an alternative to liquid fossil fuels that uses algae as its source of energy-rich oils.
- When made from seaweed (macroalgae) it can be known as seaweed fuel or seaweed oil.
- Like fossil fuel, algae fuel releases CO_2 when burnt, but unlike fossil fuel, algae fuel and other biofuels only release CO_2 recently removed from the atmosphere via photosynthesis as the algae or plant grew.
    - Algae use photosynthesis to convert CO_2 and sunlight into energy-rich chemicals.
- The lipid (oily) part of the algae biomass can be extracted and converted into biodiesel by a process similar to that used for any other vegetable oil.
- The energy crisis and the world food crisis have ignited interest in algaculture (farming algae) for making biodiesel and other biofuels using land unsuitable for agriculture.
- Out of the over 30000 freshwater and saltwater species of algae, nearly 1000 species have exhibited the potential for producing biofuel.

Advantages of using algae for fuel

- It can be grown more easily than traditional crops. It can also be cultivated on land not suitable for regularly grown crops. It also uses wastewater in its growth. This means arable land used for cultivating food crops need not be spared for algaculture.
- Other feedstocks for biodiesel such as corn and palm are a source of food for humans. So, using them for producing fuel reduces the amount of food available, increasing the cost of both food and fuel. Using algae can thus be a viable option for biodiesel.
- Growing algae as a source of biofuel has huge environmental benefits. Apart from using contaminated water for growth, many species of algae are good bio-fixers as well.

However, the technology is still fairly new and it is said to be years away from being commercially viable.

5. Prelims Facts about Indian telescopes

1.3m Devasthal Fast Optical Telescope

- It is a modern Ritchey-Chretien Cassegrain 1.3-m diameter fast optical telescope located at Devasthal, Nainital.
- It is run by Aryabhatta Research Institute of Observational Sciences (ARIES), an autonomous research institute under the Department of Science and Technology (DST), Government of India.

Giant Meterwave Radio Telescope (GMRT)

- It is an array of thirty fully steerable parabolic radio telescopes of 45 metre diameter, observing at metre wavelengths.
- It is located about 80 km from Pune.
- It is run by the National Centre for Radio Astrophysics (NCRA) which is a part of the TIFR in Mumbai.
- One of the aims for the telescope during its development was to search for the highly redshifted 21-cm line radiation from primordial neutral hydrogen clouds in order to determine the epoch of galaxy formation in the universe.
- Astronomers from all over the world use the GMRT to observe several astronomical objects such as galaxies, solar winds, pulsars, etc.
- In 2018, GMRT discovered the most distant galaxy ever known, located at a distance of 12 billion light-years.
- In 2020, it also aided in the observation of the Ophiuchus Supercluster explosion, which was the biggest explosion in the history of the universe.